EXHIBIT 11

INVESTIGATION

of the

Bryson Crash

RFI#22SC0121

Prepared by:

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THE EXPERTS
Robson Forensic

INVESTIGATION OF THE BRYSON CRASH

EXPERT'S SUPPLEMENTAL REPORT **JUNE 14, 2024**

A. INTRODUCTION

This two-vehicle crash occurred on 3/15/2020 at about 11:15pm on GA2 at the intersection with GA5 in Fannin County, Georgia. The collision involved:

- A 2008 Ford Escape driven by Santana Kelley with passengers Joshua Bryson and Cohen Bryson.
- A 2016 Ford F-250 Super Duty driven by Hunter Elliott.

As a result of the crash, the rear passenger of the Escape, Cohen Bryson, was fatally injured.

The purpose of this investigation was to determine whether Rough Country's actions or inactions related to the lift kit fitted to the Ford F-250 were improper and caused or contributed to the crash severity and the fatal injuries of Cohen Bryson.

B. ADDITIONAL MATERIALS AVAILABLE FOR REVIEW

- Exponent Single-Moving Vehicle Crash Test (Report No.: TEC2210759)
- Charles Crosby Cover Letter Dated March 29, 2024
- Charles Crosby C.V.
- Charles Crosby Testimony History
- Mecanica Scientific Service Preliminary Analysis Report by Wesley Grimes (Report No.: 22-3104)
- BRC Report by Lisa Gwin
- Lisa Gwin C.V.
- Lisa Gwin Testimony History
- Preliminary Imaging Report by Ryan James Hernandez
- Tandy Engineering & Associates, Inc. Report by Robert Pascarella
- Robert Pascarella C.V.
- Robert Pascarella Testimony History
- Transcript of the Deposition of Wesley Grimes taken on May 9, 2024
- Transcript of the Deposition of Charles Crosby taken on May 14, 2024
- Transcript of the Deposition of Dr. Lisa Gwin taken on May 5, 2024
- Rough Country's Expert Supplement to Initial Disclosures
- Plaintiff's Responses to Defendant Rough Country, LLC's Second Interrogatories
- MP4 Video file of Crash Testing Video, dated 2023-5-15
- PDF file of Crash Testing - Data File Description
- Six ASC files with Crash Testing Accelerometer Data
- PDF file of Crash Testing Photos containing 497 images
- Twenty-three JPG images of the Crash Testing - Ford F-250 Pre-Crash
- Twenty-one JPG images of the Crash Testing - Ford Escape Pre-Crash

- Eighty-six JPG images of the Crash Testing - Ford F-250 Test Setup
- Ninety-four JPG images of the Crash Testing - Ford Escape Test Setup
- Sixty-three JPG images of the Crash Testing - General Test Setup
- Two hundred and ten JPG images of the Crash Testing - Test Results
- Wesley Grimes' Partial File Received May 6th, 2024

C. ADDITIONAL ANALYSIS – EXPONENT CRASH TESTING

Exponent (Crosby) performed a vehicle crash test on May 15, 2023 (Exponent test # TEC2210759) under Mecanica Scientific Services' (Grimes) direction. The test involved a 2016 Ford F-250 striking a stationary 2008 Ford Escape. In Grimes' deposition (May 9, 2024), he stated the test:

> *"Wasn't really to recreate it. It was to explore what type of intrusion would occur without the lift kit on the vehicle, we're not trying to recreate it because we don't have cargo in the back."*

He subsequently stated:

> *"But we want to match as closely as we reasonably can the speeds, the weights, the offset, the angles, things like that. We want to match all of that as much as we can."*

Both vehicles were ballasted, instrumented and the impact velocity of the F-250 was reported as 49.9mph with the test set up so that the front of the F-250 struck the rear of the Escape. The Escape was positioned to the right of the F-250 (and the test guide rail centerline) with an offset of about 10.8". To date, there has been no opportunity to inspect the tested vehicles. Image 1 shows the pre-test impact configuration.

Image 1: Pre-Test Vehicle Condition

The following observations can be made from the supplied test data and images:

1. The tested Escape was a non-sunroof version, as opposed to the subject vehicle which had a sunroof.
2. The tested Escape was originally fitted with a trailer hitch which was removed for the test. No details of the original condition regarding attachment have been provided.
3. The tested Escape was fitted with 604lb of ballast, the majority of which (83%) were either on the second-row seat or in the second-row footwell. The Escape test weight was 3,941lb.
4. The weight of the equipment fitted to the tested Escape (brake system, data acquisition system, instrumentation etc.) was not provided.
5. The tested Escape had an empty trunk compartment (i.e., no luggage).
6. The Escape had the park brake engaged (i.e., on) when photographed pre-test.
7. The tested F-250 was fitted with 1370lb of ballast, more than 50% of this was in the truck bed. The F-250 test weight was 8,533lb.
8. The weight of the equipment fitted to the tested F-250 (brake system, data acquisition system, instrumentation etc.) was not provided.
9. The driver's airbag deployed in the tested F-250.
10. No detailed post-test crush measurements were conducted or provided for either test vehicle.
11. No detailed dynamic or post-test static second-row seat back measurements were conducted or provided for the tested Escape.
12. The tested Escape exhibited significantly increased underbody deformation than the subject Escape – Image 2 shows a comparison of the two vehicles, with the tested Escape on the left and the subject vehicle on the right. The tested Escape's underbody has been deformed, the rear rails are not exposed, and the rear floor is not visible. There was vertical alignment of the vehicle energy absorbing structures in the test.
13. The lateral vehicle overlap in the test does not match the subject condition. Image 2 shows that the right side of the subject liftgate pillar exhibits direct contact deformation (circled), whereas the tested Escape exhibits induced damage, or non-direct deformation. This indicates that the alignment of the vehicles was further offset in the test than the subject crash, resulting in less lateral overlap and therefore less structural engagement in the crash test.

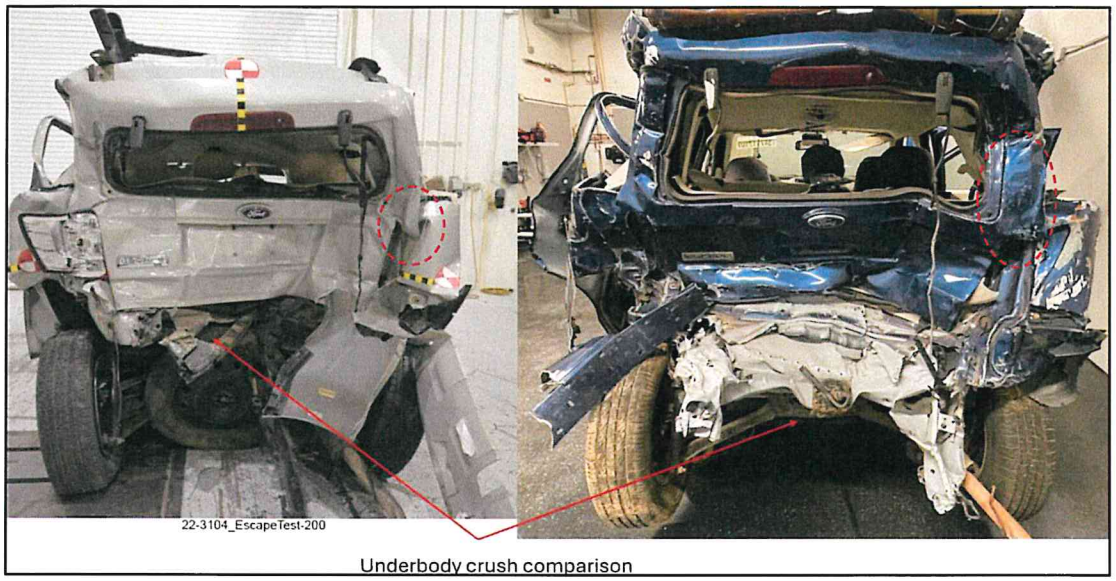

Image 2: Deformed Escape Comparison – Rear View

14. The tested Escape exhibited less deformation on the left bodyside rearward of the rear door than the subject Escape – Image 3 shows a comparison of the two vehicles, with the tested Escape on the left and the subject vehicle on the right. The tested Escape's C pillar is still visible, and the fuel filler door undeformed whereas the subject Escape's C pillar has been deformed forward of the rear door's trailing edge. The crash tested Escape's roof is also less crushed.

Image 3: Deformed Escape Comparison – Left Side View

15. The tested Escape exhibited less deformation on the right bodyside rearward of the rear door than the subject Escape. Image 4 shows a comparison of the two vehicles, with the tested Escape on the left and the subject vehicle on the right. The crash tested Escape's roof is less deformed, and the rear quarter glass aperture shows less collapse, resulting in the D pillar having an angular

component rearward rather than being pushed forward, as in the subject Escape, as highlighted by the dashed lines.

16. The tested Escape exhibited less rear seat static deformation (forward in vehicle) than the subject Escape – Image 5 shows a comparison of the two vehicles, with the tested Escape on the left and the subject vehicle on the right. The seat back angle is still rearward in the tested Escape, with the headrests adjacent to the C pillar. Whereas the subject Escape's seat back angle is forward, with the headrests significantly forward of the C pillar.

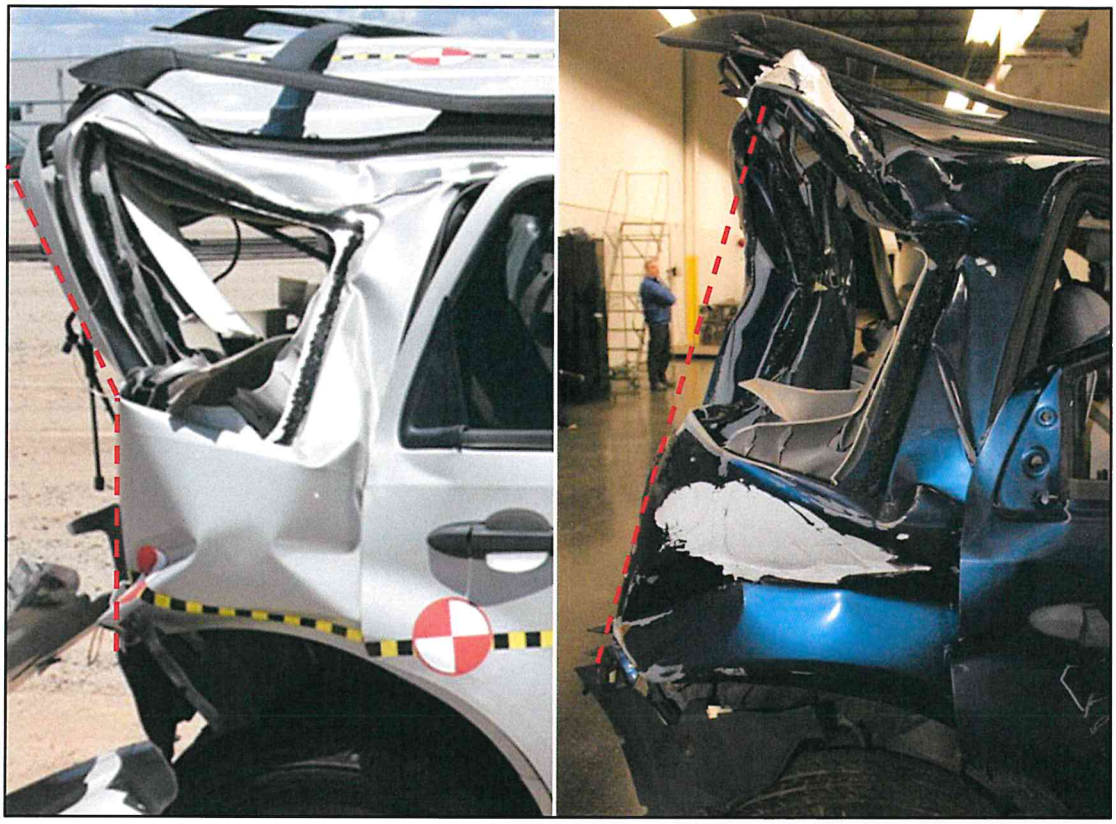

Image 4: Deformed Escape Comparison – Right Side View

Image 5: Rear Seat Comparison

17. An analysis of overlayed laser scan point cloud data for an exemplar Escape with both the crash test Escape and the subject Escape (Image 6 – crash test on left, subject on right) identifies the following:
    a. The subject Escape's wheelbase (left side) was almost unchanged at 103".
    b. The crash test Escape's wheelbase (left side) was reduced by about 5".
    c. The subject Escape's static seat back angle changed from about 65° to the horizontal to greater than 90°, being rotated forward. See Image 7 with the subject Escape on the right.
    d. The crash test Escape's static seat back angle (post-test) was largely unchanged from the pre-test condition. See Image 7 with the crash test Escape on the left.

Image 6: Point Cloud Overlays

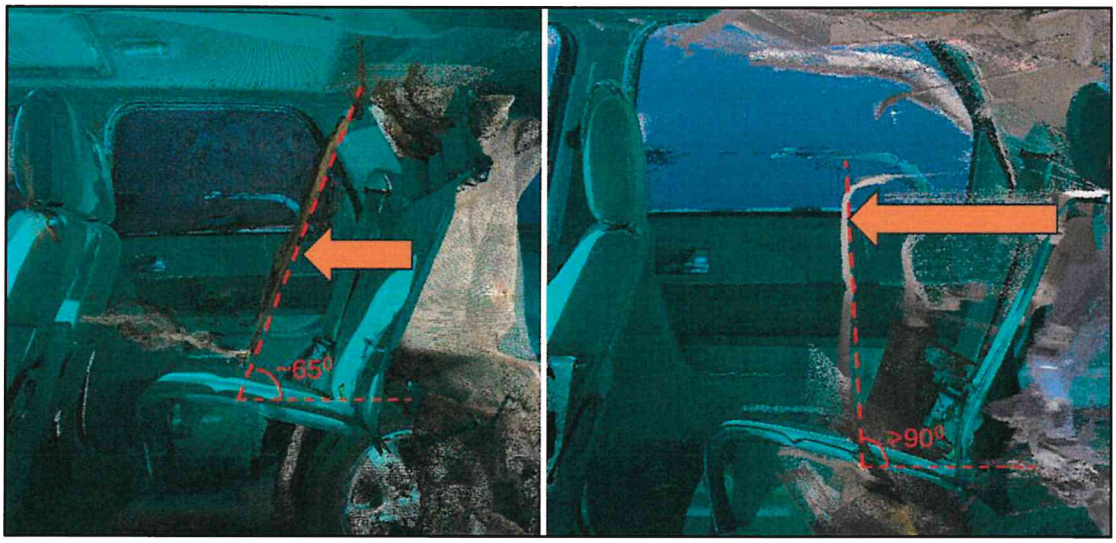

Image 7: Static Seat Angle Comparison

D. DISCUSSION

The Ford Escape test ballast weight used in the crash test does not correspond to either the subject crash condition or normal industry practice for crash testing such as NCAP. The test Escape ballast does not represent the loaded weight of the subject Escape. Both front seats were ballasted with 54lb and 50lb which does not accurately represent the weight of the two occupants (Santana Kelley and Joshua Bryson) at the time of the crash or typical crash dummies at about 167lb each. Locating about 83% (500lb) of the ballast weight in the second-row area is unrepresentative of the weight of the subject Escape during the crash which contained Cohen Bryson (weight 28lb), a car seat (weight about 19lb), a pot plant, a stroller (weight about 11lb) and other small miscellaneous items based on the GDPS SCRT Inspection image – see Image 8. The test was run with the Escape's fuel tank in an empty condition. Typical NHTSA crash test procedures and industry practice is to use an inflammable replacement fluid, such as Stoddard solvent, instead. This ensures the original fuel weight is accurately represented. **The ballasting of the crash test Ford Escape was unrepresentative of the subject crash and did not follow normal industry procedures.**

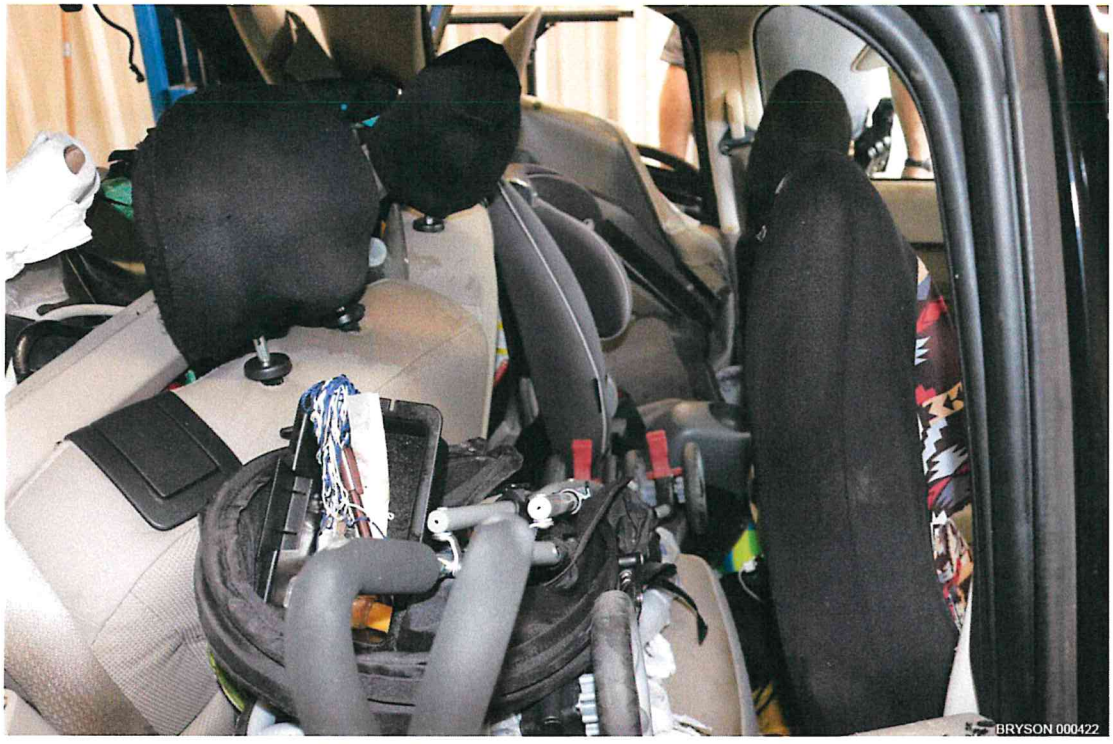

Image 8: Subject Escape Image from GDPS SCRT Report

Additionally, the crash test overlap and setup are unrepresentative of the subject crash. The overlap between the two vehicles was additionally offset by at least 4" based on the deformation pattern of the liftgate and the width of this structure, resulting in less lateral engagement in the crash test than the subject test. Less lateral engagement results in the impact being concentrated on a smaller area of the Escape. It is possible that the guidance system used for the F-250 was unable to maintain the test setup

overlap condition. The Escape's parking brake was possibly engaged in the test. There is no evidence to suggest that Kelley had engaged the parking brake at the stop light. If the testing was conducted with the brake engaged, this would add resistance to forward motion when struck by the F-250. Per TP-301R-02, the Laboratory Test Procedure for FMVSS 301R, Fuel System Integrity – Rear Impact, "*The parking brake is disengaged and the transmission is in neutral*". The crash test Escape was also a non-sunroof version. Body structures designed for a sunroof have an additional reinforcement ring to compensate for the sunroof aperture and to maintain the body stiffness and strength. The roof of the crash tested Escape exhibited significant roof bulging above the front row occupant space that was not present on the subject Escape – see Image 9. **The vehicle overlap, possible park brake engagement and non-sunroof vehicle used in the test does not accurately represent the subject crash condition.**

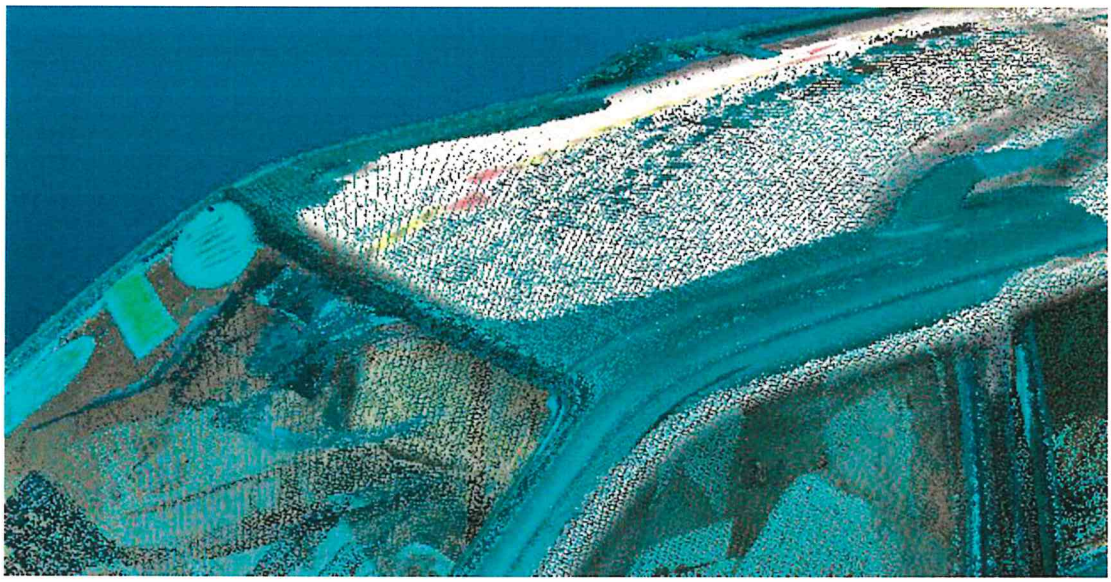

Image 9: Crash Test & Exemplar Escape Roof Comparison

Grimes compared the delta-V of the subject crash and the crash test – see Image 10. He noted that the delta-Vs were different between about 50 and 130ms and stated the difference:

> "*Was likely due to the cargo in the back of the subject Escape along with slight differences in the interaction between specific structures involved in the two impacts.*"

He offered no explanation as to why the addition of luggage would result in or contribute to a softer structural response than the crash test Escape. In Grimes' deposition, he admitted that:

> *"You are a little bit lower, so you are engaging some of the lower structures that in the crash vehicle, the subject vehicle, those lower structures weren't engaged."*

As highlighted earlier, the tested Escape's underbody was deformed, the wheelbase reduced by about 5" on the left side and the underbody absorbed and dissipated crash energy. The testing shows that without a lift kit, an F-250 would engage the underbody structure of the Escape. **The Delta-V of the tested Escape exhibits a stiffer response starting at about 50ms and this is due to the increased structural engagement of the underbody due to the compatible vehicle structures.** Grimes admitted that there was increased vertical structural engagement in the crash test and the testing shows that there was underbody engagement of the Escape when struck by an F-250 without the RC lift kit. The increased compatibility resulted in less disturbance to the second-row survival space.

The crash test was not an override condition for the Escape due to the standard ride height of the F-250 and the absence of the RC lift kit.

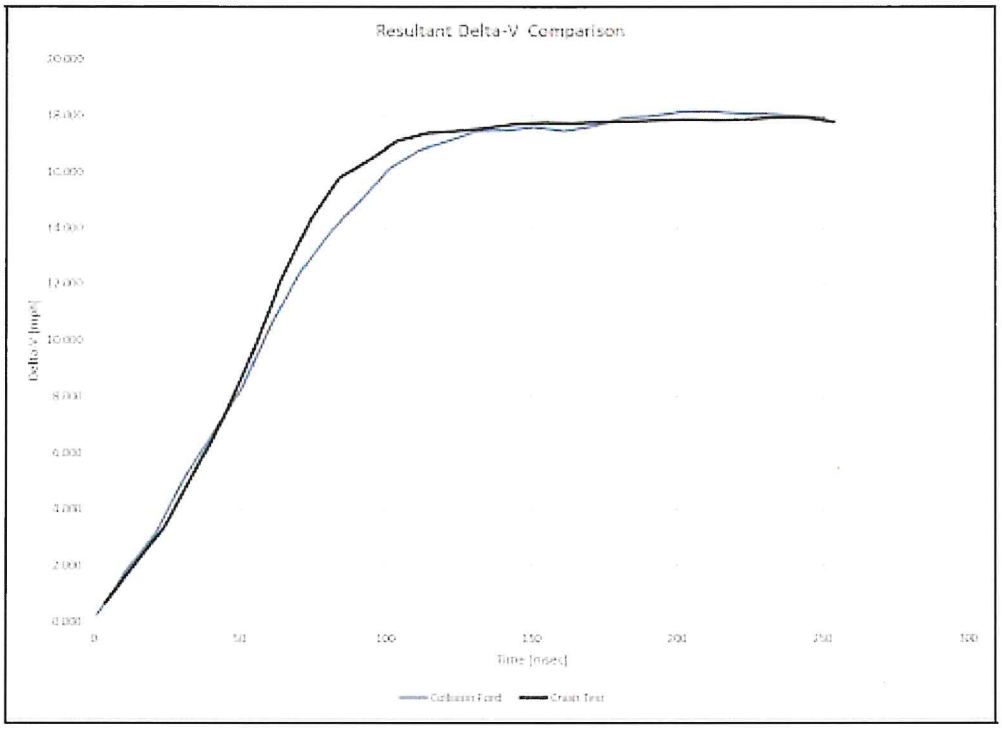

Image 10: Grimes' Delta-V Comparison

The crash test F-250's driver airbag deployed during the test in contrast to the non-deployment in the subject crash despite the delta-Vs (about 18mph) being comparable. This indicates that the increased compatibility in the crash test resulted in increased loading of the F-250 structure that was sufficient for the airbag deployment to be commanded. **The lift kit fitted to the subject F-250 resulted in the airbag not being deployed.**

The cargo in the subject Escape consisted of a shop-vac, an umbrella stroller, two camping chairs and a bag of clothing (per Plaintiff's responses to RC's second interrogatories). From the images available from

the scene and subsequent inspection (Images 11 and 12) the shop-vac location is on the right side of the luggage compartment. Additionally, the shop-vac canister was significantly crushed during the crash – Image 13. Despite this information, no attempt was made to add the cargo to the crash test to determine the influence, if any, of the cargo on the vehicle intrusions. Grimes' claims that:

> *"The difference in the seat deformation in both Escapes was probably due to the lack of cargo in the rear cargo area of the test Escape."*

However, the Exponent test does not test Grimes' cargo hypothesis and so by omitting cargo in the testing, he has not followed a scientific methodology to attribute seat deformation to the cargo. Additionally, as noted earlier, there was significantly less upper trunk compartment crush (and roof crush) in the crash test due to the lower engagement height of the F-250. This results in more vertical luggage space being maintained and would allow luggage to move upward rather than forward in the vehicle. The higher ride height of the F-250 in the subject crash resulted in more of the trunk space being crushed (Image 4).

Image 11: Crash Scene Image of the subject Escape

Image 12: Subject Escape Image from GDPS SCRT Report

Image 13: Shop-Vac and Camping Chairs from the subject vehicle

Grimes did not conduct a detailed analysis of the structural intrusions or the rear seat static movement between the crash test and subject crash. His only intrusion analysis consisted of an overlay of the point cloud data of the two sets of vehicles, and he opined that the crash test intrusion was higher than the subject crash intrusion. He did not study the intrusion related to the second-row survival space. If the crash test intrusions were higher than the subject crash, this would be unusual and contrary to known compatibility testing data and published reports. In Ford's compatibility research (Roche 1st supplemental report) the intrusions were increased with the truck's ride height being increased. In NHTSA's compatibility testing[1] there was a reduction of intrusion by about 5" when a 2006 Ford F-250s with a Blocker beam (SEAS) was crashed into 2002 Ford Focus compared to a F-250 without a Blocker beam. The addition of the SEAS resulted in more structural compatibility and reduced the intrusion in the struck vehicle. The Exponent crash test intrusion increase is likely due to the test setup, including the vehicle ballasting, vehicle overlap and possible park brake engagement of the Escape.

[1] NHTSA. 2007. NHTSA's Recent Vehicle Crash Test Program on Compatibility in Front-to-Front Impacts. Paper Number 07-0231.

As highlighted earlier, the crash test crush characteristics are significantly changed due to the underbody loading and resulted in rear seat translation rather than rotation (Image 7). The orientation of the occupant's seat was maintained at the original seat back angle and an occupant's head wouldn't be rotated toward the front seat and so would be better protected. **The improved vertical structural compatibility in the crash test loaded the underbody and resulted in the second-row survival space being better maintained.**

The crash test was conducted in an improper manner and is not representative of the subject crash with just the lift kit removed due to the improper test setup. Even in Exponent's unrepresentative test, the second-row survival space was better maintained due to the increased vertical structural compatibility and underbody loading of the Escape.

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E. ADDITIONAL FINDINGS

Within the bounds of reasonable professional certainty, and subject to change if additional information becomes available, it is my professional opinion that:

1. The ballasting of the crash test Ford Escape was unrepresentative of the subject crash and did not follow normal industry procedures.

2. The vehicle overlap, possible park brake engagement and non-sunroof vehicle used in the test does not accurately represent the subject crash condition.

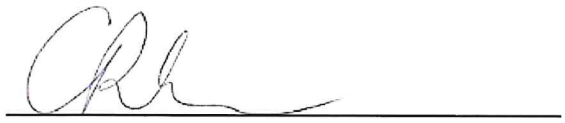
3. The Delta-V of the tested Escape exhibits a stiffer response starting at about 50ms and this is due to the increased structural engagement of the underbody due to the compatible vehicle structures.

4. The crash test was not an override condition for the Escape due to the standard ride height of the F-250 and the absence of the RC lift kit.

5. The lift kit fitted to the subject F-250 resulted in the airbag not being deployed.

6. The Exponent test does not test Grimes' cargo hypothesis and so by omitting cargo in the testing, he has not followed a scientific methodology to attribute seat deformation to the cargo.

7. The improved vertical structural compatibility in the crash test loaded the underbody and resulted in the second-row survival space being better maintained.



Christopher Roche